

NBII Formally Joins the Conservation Commons

Imagine a not-too-distant future in which a conservation biologist studying a threatened migratory bird in one country can go online and retrieve observational data about that species from other observation points along its transcontinental migration route. Or a park manager using an online modeling tool to predict the future extent of available vegetation required by a mammal whose range extends outside the park's jurisdiction into areas undergoing rapid development.

Both scenarios require access to data and tools, yet even after

researchers publish on the artifacts of their efforts, these data and tools are too often hidden from the larger conservation community, bound by

The Commons works to ensure fair access to data, information, knowledge, and expertise on the conservation of biodiversity . . .

myriad issues including copyright, lack of digitization, inability to load the data online, and professional hoarding. Compounding the problem

is the lack of international standards to facilitate true interoperability of the data that are available to the community. Enter the Conservation Commons.

Facilitated by the World Conservation Union (IUCN), the Conservation Commons "is the expression of a cooperative effort of non-governmental organizations, international and multi-lateral organizations, governments, academia, and the private sector, which is responding to this challenge

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PBIN Changes Its Address ... and Helps Change Lives

In January 2004, the NBII Pacific Basin Information Node (PBIN) moved to Maui Community College (MCC). Two months later, PBIN assisted with training sessions for MCC faculty, students, and local natural resource agency staff.

The training emphasized a Hawaiian sense of "place" and focused on geographic information systems (GIS) and the global positioning system (GPS), fields that offer formidable methods for managing natural resources through geographically based information.

"I started giving GIS lectures in the spring semester of 2004," says PBIN's Derek Masaki. "First, I created a series of introductory GIS lectures for a physical geography class. The four-lecture series included background on GIS, GPS, how natural resource agencies like USGS are using geospatial

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Rhyn Davies (left) and Rina Delapena identify a native Hawaiian fern along the Waihee Ridge Trail.

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SAIN and the NBII Geospatial Interoperability Framework (GIF)

The NBII GIF addresses several challenges to providing seamless and transparent discovery and visualization of distributed geospatial data resources. Such challenges include legacy applications, limited resources, and the complexity of implementing interoperability across a distributed network of diverse partner organizations. The approach defined by the GIF is now fully developed and integrated throughout the NBII Portal. The NBII Southern Appalachian Information Node (SAIN) has used this approach to improve access to its geospatial data resources.

The GIF defines a strategy for making geospatial data interoperable across the NBII network and for making it possible to search for geospatial resources. The use of Open Geospatial Consortium (OGC) compliant Web services and the establishment of a catalog of these services are the two most fundamental aspects of the GIF. NBII nodes and partners can integrate geospatial data resources into the NBII network by

using OGC-compliant Web services and by submitting a record of the Web services into the NBII Dublin Core-based catalog of Web Map Services.

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The ability to search the NBII catalog from within geospatial applications makes finding new data and adding them to a map display seamless and transparent. By using distributed geospatial data resources in applications, users can customize the map display with distributed data on-the-fly with little software development time required. However, developing such a complex application with significant capabilities is difficult with

limited resources. The GIF provides tools for developing applications that directly integrate the search feature and allow the user to immediately visualize distributed geospatial data resources.

The experience of SAIN is an ideal case study in the use of the GIF because it demonstrates each of the areas where the GIF can provide advantages for the NBII Program. The use of GIF toolkits and services has provided several benefits for SAIN, including the ability to integrate legacy applications into the NBII Portal, enrich the end-user experience, and streamline the development and maintenance of applications.

SAIN provides a number of legacy applications that were developed prior to the deployment of the public NBII Portal. However, SAIN has used the GIF and the NBII Portal technology to seamlessly integrate a variety of existing disparate data sets and geospatial applications into a community called "Maps of the Region." Maps related to brook trout, invasive plants, and significant ecological areas are just a few examples of what a user will find within this community.

The use of the GIF map portlet, developed in Java, has enriched the end-user experience by providing direct access to additional interoperable data sets. Previously, each geospatial application provided through SAIN focused on the needs of individual partners, but the data were only accessible through their specific applications; the tools also lacked flexibility because the map display was predefined. The portlet allows a content or community manager to set a number of customizable display, search, and levels of user interaction to deliver an improved user experience. By using the GIF tools and services, the end user can now search for additional information in the NBII map service catalog,

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Access, the quarterly newsletter of the National Biological Information Infrastructure, is published by the NBII National Program Office.

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Visit the NBII Home Page at <www.nbii.gov>.

technology, and a hands-on tutorial in which students used ESRI ArcGIS to create a map with actual biology layers.”

In summer 2005, PBIN efforts at MCC advanced, thanks in part to the assistance of Elizabeth Russell, a geography instructor who helped secure funding for GIS software. The funding was enough for a 25-seat lab. Elizabeth and Derek worked with MCC non-credit training staff and established a relationship that allowed credit students to use the new training lab operated by the non-credit education program. The lab they set up—the first ESRI ArcGIS installation on campus available to students and faculty—has since been used for MCC student learning, non-credit extended education, training workshops, and demonstrations.

To date, the training has reached about 250 individuals, including students, faculty, and agency staff. Trainees acquire a fundamental understanding of geospatial technology and the application of GPS/GIS tools in natural resource conservation. Those who participate in the hands-on tutorials or non-credit courses also gain GIS skills that allow basic map production and geospatial analysis.

Kaylene Keller, one of the program’s more popular trainers, has taught a variety of courses, including Introduction to ArcGIS, Intermediate ArcGIS, and Spatial Analysis using ArcGIS. In 2006, Kaylene was hired by NOAA at the Papahānaumokuākea Marine National Monument and moved to Honolulu. She continues to provide courses and is planning another workshop for advanced ArcGIS users this fall.

“GIS and technology are important



Derek Masaki and Kaylene Keller at a GIS Training Course at Maui Community College.

tools for resource managers, and having a training program locally makes the technology more accessible,” Kaylene says. “The students at MCC have been fantastic, and having GIS data from PBIN and the State of Hawai’i made it easy to develop hands-on activities for the students that were focused on Maui natural resources.”

For Greg Hansen, one of Kaylene’s premier pupils, the training made a real difference in his career and his life. Greg used to be a field technician at a local reserve. His interest in GIS led him to take the courses available through MCC, including all the courses Kaylene taught. His new expertise led to his current position at Maui Land and Pine as GIS coordinator—their first ever. Greg is now in the Kapalua corporate office, where his responsibilities include map production

and analysis for all divisions of the company.

“Before I attended the GIS classes at MCC, my understanding of GIS was narrowly focused on my day-to-day activities in the forest preserve,” Greg says. “The technical instruction in Kaylene’s classes coupled with the enthusiastic support of Derek at PBIN opened my eyes to the myriad potential of this technology and inspired me to broaden my focus. The collaboration between PBIN and MCC has created an incredibly valuable resource for the community.”

To learn more about PBIN outreach and education activities, contact Mark Fornwall, PBIN Node Manager, at <mark_fornwall@usgs.gov>.

For more information on PBIN training sessions at MCC, contact Derek Masaki at <dmasaki@usgs.gov>.

OFWIM: Discover the Benefits!

What Is OFWIM?

The Organization of Fish and Wildlife Information Managers (OFWIM) is a non-profit organization whose goal is to promote the management and conservation of natural resources by facilitating technology and information exchange among fish and wildlife information managers. OFWIM was formally established in 1993 and was granted non-profit status in 1995.

How Does OFWIM Achieve Its Goals?

To achieve its mission, OFWIM emphasizes coordination and outreach, technical assistance, and continuing education. Objectives within each of these focus areas are met through the production of an information newsletter (published three times a year), sponsorship of an annual national meeting, member participation on committees throughout the year, sponsorship of and participation in training sessions, and the maintenance of the OFWIM-L listserv.



Hackersball poster session in Minneapolis - OFWIM 2006.

Who Are the Members of OFWIM?

The membership base of OFWIM consists of working professionals representing a broad assortment of state fish and wildlife agencies, federal agencies, non-profits, and universities. These data managers, scientists, GIS experts, wildlife conservation experts, land managers,

and more are involved in many components of natural resource management.

How Do I Become a Member?

Individual memberships are \$25 per year. Organizational memberships (six members) are \$100 per year. Members are entitled to vote in the annual election and hold office, and are highly encouraged to participate. Current members are sent newsletters and receive a discount on conference registration. To join, or for more information, please visit our Web site at <http://www.ofwim.org>.

When and Where Is the Next Conference?

The 2007 annual conference will be held at the National Conservation Training Center (NCTC) in Shepardstown, WV, September 17–21. Please join us!

What Is the Conference Theme? Can I Make a Presentation?

This year's conference theme is "Common Problems—Common Solutions: Advancing Natural Resource Management Goals through

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Dinner cruise aboard the Minneapolis Queen riverboat.


Conservation Commons (continued from page 1)

by seeking to break down barriers to access, more effectively connect practitioners to data and information assets, as well as to develop and adopt standards for integrating these assets to support the generation of knowledge and best practice. The Commons works to ensure fair access to data, information, knowledge, and expertise on the conservation of biodiversity for the benefit of the global conservation community and beyond” (Conservation Commons Web site: <<http://www.conservationcommons.org>>).

Currently, 84 agencies and organizations have formally endorsed the principles of the Conservation Commons. In May 2007, the NBII became a partner. NBII Executive Director Gladys Cotter notes, “There is a tremendous degree of synchronicity between the efforts of the NBII and the Conservation Commons. Both are dedicated to opening up critical data to researchers, managers, and decision-makers who work to protect and preserve our biological resources. Additionally, we have a common interest in improving the nature of that sharing through the development of core standards for integration and access. We are delighted to join forces with the Commons and its partners to facilitate this important process.”

A widely recognized issue

with serious ramifications for data integration and interoperability is the wide array of standards used within and between conservation and research agencies to monitor, map, describe, host, and integrate data about species. Recently, IUCN has coordinated with a not-for-profit consortium, the Organization for the Advancement of Structured Information Standards (OASIS), to bring together Commons partners in two workshops addressing biodiversity conservation standards.

The NBII has participated actively in these workshops, which have explored possibilities for establishing core international standards in such areas as geospatial data, species taxonomy, references and publishing, and service-oriented architecture. While daunting, the task is necessary to produce a conservation future that will include true sharing and integration of data, and the NBII and other Conservation Commons partners are committed to this vision. 

Conservation GeoPortal to Launch in Summer 2007

Led by the National Geographic Society, a Conservation Commons partner, the Conservation GeoPortal will go live in summer 2007. A collaborative effort among Commons partners, the GeoPortal facilitates “the discovery and publishing of GIS data and maps to support conservation decision-making and education. It is primarily a data catalog, intended to provide a comprehensive listing of GIS data sets and map services relevant to biodiversity conservation” (Conservation GeoPortal Web site: <<http://www.conservationmaps.org>>).

The GeoPortal does not provide maps and data directly, but rather

the descriptive metadata about those resources. The system helps users identify and locate relevant data, then provides them with a Map Viewer to display, manipulate, and combine live map services. Users can create, save, or e-mail maps created from these map services. Data channels in the GeoPortal will include conservation areas, species, threats, habitats, environmental factors, socioeconomics, and base map layers.

Through a reciprocal agreement, map layers, data, and metadata from the NBII will be accessible through the GeoPortal, and GeoPortal services will be available through the NBII.

OFWIM (continued from page 4)

Collaboration and Technology.” Presentations can be made in the following broad topic areas: (1) Effective application, development, and use of information technologies and services; (2) Managing information for a changing landscape; (3) Information management for State Wildlife Action Plans; and (4) Prioritization for land acquisition.

Your presentations and posters are welcome! For information about



Hermann Karl, USGS scientist, giving a presentation in Minneapolis.

abstract and poster submissions, and more details about the conference topics, please visit <<http://www.ofwim.org>> and access both the “Call for Papers” and the “Poster/Presentation Abstract Submission Form.” Registration will be available in late July.

Questions About OFWIM?

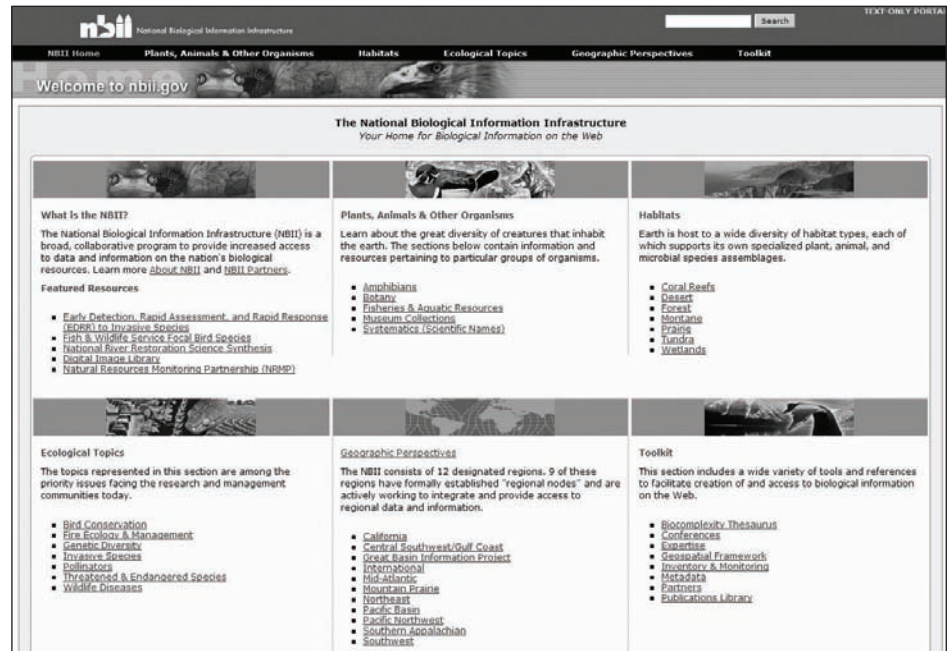
E-mail your questions to Viv Hutchison, 2007 OFWIM President, at <vhutchison@usgs.gov>. 

NBII Web Site Recognized at BEA Conference

According to Ray Carlino, System Administrator with the NBII Program Office, the new NBII Web site <www.nbii.gov> is getting noticed and winning some rave reviews.

Carlino learned this when he was attending the BEA Participate conference this spring in Atlanta. BEA Systems, Inc., which hosted the conference, is a world leader in enterprise infrastructure software, and the conference Carlino attended drew over 700 international attendees from private industry, government agencies, universities, and non-profit organizations.

In the keynote presentation, the NBII Web site was specifically singled out, receiving praise for its attractive graphics and content layout. Carlino said he heard more kind words in the following days. "During the week we had several other groups come up to us and tell us how much they liked the site," he said.



Carlino also said that BEA and federal portal users asked his group if they would present at more meetings to show the work they've done and explain how they did it. Carlino said they would consider it for the next

conference. He was also eager to share the credit with everyone who worked on the NBII Web site. "I know a lot of hard work went into this by the NBII and partners and everyone should be proud," he said.

Cotter and Paul Sign MOU



Gladys Cotter (left), Executive Director of the NBII, and Ellen Paul, Executive Director of the

Ornithological Council (OC), recently signed a memorandum of understanding (MOU) to establish

cooperation on user requirements and sources of bird data for the NBII. The OC will work with the ornithological and resource management community through surveys, meetings, and focus groups to better understand content needs. This includes interpretative and analytical tools; means to assess what content is already available; and determining gaps in content and the manner of presentation and access. The OC will also make recommendations to the NBII on how to better serve the needs of both the scientific and resource management communities to get access to bird information for research, education, and resource management decision making.


The Ornithological Council is composed of 11 scientific ornithological societies in Canada, the United States, Mexico, the Caribbean, and Central and South America.

visualizing and analyzing it in ways the developers did not anticipate.

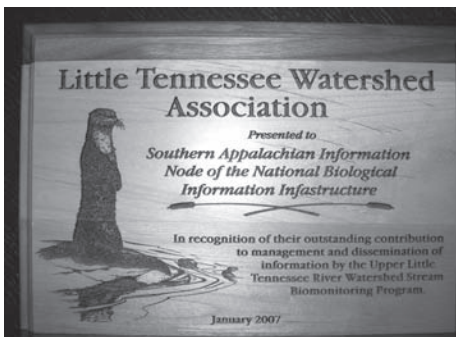
The new map service portlet provided through the NBII GIF has also reduced the time and cost of developing, maintaining, and updating geospatial applications for SAIN. For example, SAIN was able to configure and deploy the “Maps of the Region”

page within just a few days. In addition, since these toolkits and services use common components, maintenance of the components has been reduced.

The NBII GIF addresses several challenges to sharing geospatial information and developing and maintaining geospatial applications.

By integrating SAIN geospatial applications into the NBII Portal using GIF tools and services, SAIN is efficiently providing tools that take full advantage of NBII resources, and in turn, add value to the NBII by providing access to data through interoperable Web services. 

SAIN Receives Recognition Award From LTWA



Little Tennessee Watershed Association (LTWA)


The Little Tennessee Watershed Association (LTWA) presented the NBII Southern Appalachian Information Node (SAIN) and PJ Nabors, Senior Geographic Analyst with the Tennessee Valley Authority, with an award “in recognition of their outstanding contribution to management and dissemination of information by the Upper Little Tennessee River Watershed Stream Biomonitoring Program.”

SAIN has worked with LTWA since 2002 to provide public access to data collected through their Biomonitoring program. LTWA’s mission is “to protect and restore water quality and habitat in the Little Tennessee River upstream of the Fontana Reservoir,” and they have been collecting data for 17 years to help meet this mission.

These data have been used

to help protect 34 miles of river, including the 4,500-acre Needmore tract, which protected 26 miles of Little Tennessee River frontage and over 30 miles of tributary frontage. Data and the derived Index of Biotic Integrity have also been used to identify water quality problems in the watershed, leading to much stronger point-source permitting and improved waste-water management. These data have also supported tracking the spread of invasive exotic

species and the status of the federally threatened spotfin chub.

The data shared through this project are found through navigating the SAIN Web site <<http://sain.nbii.gov>>: About the Node→Projects→Upper Little Tennessee River Project. SAIN has GIS layers, Applications, Map Viewers, Static Maps and Information Web pages available. Please visit the SAIN Web site and the LTWA Web site <<http://www.ltw.org>> for more information. 



Farial Shahnaz (center) and PJ Nabors (right) of NBII-SAIN accepting the award from LTWA Director Brent Martin.

IHNV Fish Virus Database Developed

Along the Pacific Coast of North America, from the Sacramento River in California to Kodiak Island in Alaska, the infectious hematopoietic necrosis virus (IHNV) can cause severe outbreaks among stocks of salmon and trout.

Numerous isolates of the virus have been obtained from wild, farmed, and hatchery fish in the last 40 years. Over 600 IHNV isolates from Washington, Oregon, Idaho, California, Alaska, and British Columbia have been genetically analyzed. As a result of this genetic

The new interface allows fish health managers and researchers to dynamically access information about strains of IHNV...

typing, dramatically different patterns of diversity and evolution of IHNV have been observed.

For many years, the data and information on IHNV were contained in an independently managed database and in associated paper documents. Each record had to be entered centrally and managers in the field had to submit requests for data from the repository. It took considerable time to access the data, and it demanded time from the researchers managing the data.

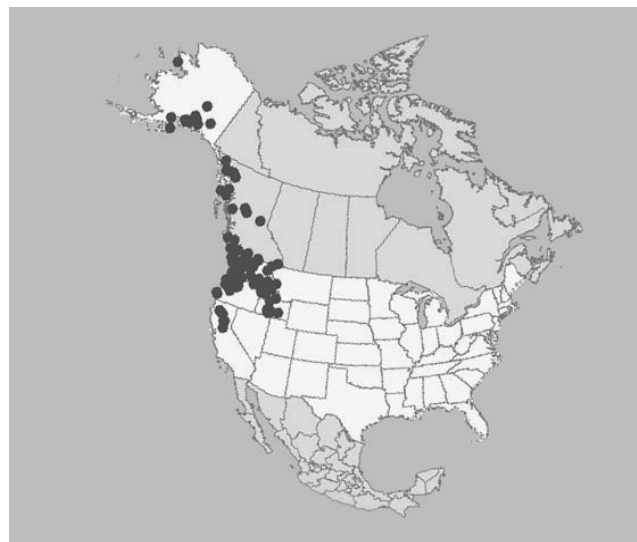
To facilitate the cataloging of the data available on these isolates, the IHNV Fish Virus Database interface was developed in collaboration with the USGS Western Fisheries Research Center, the Northwest Alliance for Computational Science and Engineering at Oregon State University, and the NBII Pacific Northwest Information Node. The interface is database-driven, using PostgreSQL and PostGIS on the

back end. Maps are generated dynamically from user input using MapServer and PHP, and many of the base layers are rendered from TIGER/Line GIS data. The database can be accessed at <http://gis.nacse.org/ihnv/>.

The new interface allows fish health managers and researchers to dynamically access information about strains of IHNV within various watersheds and fish culture facilities and have a means for comparing emerging strains of IHNV.

Some features of the database include the following:

- Users can query specific virus-related disease data from each of the virus isolates and compare the associated biological, genetic, and spatial components.
- Results are displayed in tabular



Map output from the database showing sites of IHNV isolation as black dots.

form and on an interactive map, both of which are highly customizable.

- Users can compare viral genetic sequences from samples collected in disparate locations or at different times.

In the future, the technology may be adapted to catalog another rhabdovirus, the viral hemorrhagic septicemia virus (VHSV), which has been affecting many fish species in the Great Lakes region. 🐟

What Is IHNV?

Infectious hematopoietic necrosis is caused by infectious hematopoietic necrosis virus (IHNV), a member of the Rhabdoviridae. Infected fish can succumb and die of disease, recover and clear the virus, or become asymptomatic carriers and transmit IHNV. Particularly large amounts of virus are shed by juvenile fish and spawning adults. Transmission is mainly waterborne from fish to fish, but can



Fish top left is healthy, while dark color and exophthalmia (bulging eyes) on the other fish are signs of IHNV.

Photo Credit: Gael Kurath, USGS Western Fisheries Research Center.

also occur via contaminated food or spawning fluids. The site of

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Invasive Species Toolbox

Do you have news about an invasive species project you would like to share through this column? The Toolbox is a collection of useful items and highlights related to invasive species information management issues. Please send any ideas or suggestions you might have for Toolbox columns to <asimpson@usgs.gov> or <esellers@usgs.gov>.

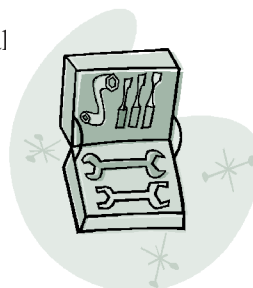
Building Electronic Field Guides for Invasive Species.

The Biodiversity and Ecosystem Informatics Lab at the University of Massachusetts, Boston, <<http://efg.cs.umb.edu>> is a team of computer scientists and biologists who work together to help people process and serve biodiversity data in a digital format. As part of our Electronic Field Guide (EFG) project, we have developed two open-source applications, EFG2 and EFGKeys, which allow authors to create electronic field guides and tree-based keys using only a spreadsheet or database file and a collection of digital media (images, video, or sound).

While the EFG software can be used to build a guide to nearly anything (even restaurants!), it can be especially useful for invasive species education and outreach projects. One such project is The Electronic Field Guide to the Invasive Plants of Nantucket <<http://efg.cs.umb.edu/nantucket>>. Created by a team of amateur and professional botanists working with the Maria Mitchell Association, the guide serves as a tool for the identification of over 70 different non-native plants that were determined by risk assessment to pose a threat to Nantucket Island. Another project currently in development is the Native Plant Gardeners' Guide <<http://efg.cs.umb.edu/nativeplants>>. Using queries to the New England

Wildflower Society's plant catalog, the guide takes invasive plant profiles and suggests native plants with similar morphological characteristics.

For more information about the EFG project, or to learn how we can help you serve up your own biodiversity data on the Internet, e-mail Dr. Robert Morris <efginfo@cs.umb.edu>. To download either the EFG2 or EFGKeys software, visit <<http://efg.cs.umb.edu/efg/efgsoftware.html>>.




Conservation, in conjunction with the University of California, Santa Cruz, the University of Auckland, and the World Conservation Union (IUCN), compiled a database of invasive vertebrate eradications on islands. More than 725 records for eradications are currently in the Invasive Species Eradication Database (beta site available at <<http://atlantis.outter.org/island>>). A final version will be available in late 2007 at <<http://www.islandconservation.org>>.



Goats (*Capra hircus*), when allowed to run wild, become feral and can cause tremendous damage to island ecosystems. Photo Credit: Annie Simpson, NBII.

A Database for Successful Invasive Vertebrate Eradications on Islands

Islands represent some of the most biodiverse and threatened communities on the planet. Introduced vertebrates such as rats, goats, cats, foxes, pigs, and rabbits are the main cause of extinction on islands, but they can often be successfully eradicated. The non-profit organization, Island

Visitors can view records that include the name of the island, genus, species, and common name of the eradicated species, the status of the eradication (e.g., successful or unsuccessful), and source information, such as a literature reference or contact. In the future, the database will have a report submission function that will allow visitors to submit updates or enter new eradications. 

What Is IHNV? (continued from page 8)

virus infection is thought to be through the skin at the base of the fins, or through the gills or digestive tract. Infected fish may exhibit various signs, such as abdominal distension, exophthalmia (bulging eyes), darkening of the skin, and anemia, but most often the first indication of disease is a rapid

increase in mortality without visible signs of disease.

Epidemics of IHNV occur in fish culture facilities every year and cause mortality levels of 20 to 90 percent.

Literature Referenced

Bootland, L.M., and Leong, J.C. 1999. Infectious hematopoietic necrosis virus. In vol. 3 of *Fish diseases and disorders*, ed. P. T. K. Woo and D. W. Bruno, pp. 57–121. New York: CAB International.



Exophthalmia (bulging eyes) caused by IHNV in a rainbow trout fry. Photo Credit: Gael Kurath, USGS Western Fisheries Research Center.

NBII in the News

The NBII is recognized throughout the year in a variety of venues, including the popular and trade press, government publications, professional journals, and the broadcast media. Here are a few of the most recent examples:

- Elizabeth Sellers, manager of the NBII Pollinators Project, recently authored an article titled “USGS -- Helping Pollinator Awareness Take Flight” for *People, Land & Water* that was published during National Pollinator Week (June 24-30, 2007). For more information, see <http://www.peoplelandandwater.gov/scienceandstewardship/usgs_06-18-07_helping-pollinator-awareness.cfm>. *People, Land & Water* is the U.S. Department of the Interior’s (DOI) news magazine and is written by DOI employees from across the nation. The Secretary’s communications office coordinates its content.
- The NBII was mentioned in an article titled “Biodiversity standards project aims for better government and business decisions,” which appeared in the *ICT Standardization Report* of May 21, 2007 <<http://www.ictstandardization.com/news/200705/article20070564.html>>. The article talks about a variety of

organizations and initiatives focused on integrating biodiversity data and information.

- NASA’s Global Master Change Directory and the NBII Metadata Clearinghouse were cited in an article titled “Meta-information concepts for ecological data management” in *Ecological Informatics* (volume 1, pp. 3-7) by William K. Michener, a



Zebra swallowtail butterfly (*Eurytides marcellus*) drinking nectar from the flower.

specialist affiliated with the Long Term Ecological Research Network. The article talked about advances in database and Web-based technologies that have enabled traditional published data catalogs to be replaced by electronic and searchable data catalogs and directories.

- The National Cactus Moth

Detection and Monitoring Network, one of many projects the NBII supports, was described in the “Ecology on the Web” department of the July 2007 issue of *BULLETIN* of the Ecological Society of America. This Web-based database is an important tool for the management of the cactus moth (*Cactoblastis cactorum*), a widely used biological control agent of the prickly pear cactus (*Opuntia species*) in Australia and South Africa. Cactus moth was detected in the Florida Keys in 1989 and has spread north and west as far as South Carolina and Alabama. The cactus moth larvae quickly destroy prickly pear plants and are a threat to natural biodiversity in the United States (see <http://esapubs.org/bulletin/current/web_pdfs_jul_07/ecoweb_jul07bulletin_print.pdf>).

- The NBII Invasive Species Information Node (ISIN) was mentioned in a July 23, 2007, article from the *Chicago Sun-Times* News Group by Dr. Jerry H. Kavouras titled “Invasive species can wreak havoc” (see <<http://www.dailysouthtown.com/lifestyles/477530,231LIF1.article>>). Kavouras mentions <invasivespecies.nbii.gov> – the ISIN home page – as a site that provides information about the identification and sightings of invasive species, control methods, and lots of other useful invasive species tidbits. 🌱

International Connections

IABIN Invasives Information Network Promotes National Invasive Species Strategies

The Inter-American Biodiversity Information Network's (IABIN) Invasives Information Network (I3N) is collaborating with national and regional partners in the Americas to develop a toolkit for National Invasive Species Strategies. The I3N toolkit includes a database to track and measure invasive species threats as well as risk prediction and pathways analysis tools. The tools will help determine which common invasive species pose the greatest threat to a nation or ecosystem and predict the entry vectors responsible for the spread of potential invasive species.

The I3N strategies and tools are currently being distributed throughout the Americas and will also be highlighted and distributed to partners in an IABIN-sponsored workshop to be held in late 2007 in the Caribbean. In this workshop, personnel from government and conservation organizations in Caribbean nations will be trained on I3N, TNC, and GISP tools and strategies and learn best practices followed in other nations for managing the invasive species threat.

For additional information, please contact Annie Simpson <asimpson@usgs.gov>.

BIO Hosts Global Forest Information Service Conference

The USGS Biological Informatics Office (BIO) hosted the strategic planning meeting of the Global Forest Information Service (GFIS) in Oak Ridge, TN, in June 2007. GFIS is an integrative online resource for information on worldwide forestry practices and trends. The network facilitates information and knowledge sharing among the global forestry community, forges links between disparate information systems, and develops common standards and tools

to allow users easy access to the world's forestry information.

Participants included Steering Committee and Implementation Group members from the Food and Agricultural Organization, the Center for International Forestry Research, and Finland's METLA, as well as International Union of Forest

Research Organizations (IUFRO) and GFIS officials. At the meeting, U.S. participants discussed possibilities for collaboration with global forest institutions and sharing tools, standards, data, and infrastructure technologies developed by the USGS Biological Informatics Office. The GFIS Implementation Group approved a draft Development Framework at the meeting, and refined technical standards that will allow streamlined searching for forestry information and data through the GFIS portal. The group also agreed to begin development of a multilingual forestry thesaurus, which will provide a needed resource to the global forestry community. The thesaurus will build upon work already completed by the IUFRO Global Forest Decimal Classification unit.

For more information, contact Dr. Toral Patel-Weynand <tpatel-weynand@usgs.gov>.

USGS-BIO to Host South America Protected Areas Workshop

USGS-BIO in cooperation with the IABIN Protected Areas Thematic



GFIS members: (back row) Eric Laudis (BIO), Eero Mikkola (IUFRO), Keith Langdon (NPS), Juha Hautakangas (METLA), (front row) Toral Patel-Weynand (USGS), Johanus Kaizer (FAO), and Peter Mayer (IUFRO).

Photo credit: Michael Hailu (CIFOR) Great Smoky Mountains National Park.

Network, the World Conservation Monitoring Centre (WCMC), and Guyra Paraguay, will host a workshop to collect and integrate protected areas data from six nations in South America in November 2007. WCMC hosts the World Database on Protected Areas (WDPA) <<http://www.unep-wcmc.org/wdpa>>, which is the official international repository for data on parks, wilderness preserves, and other protected areas. The workshop will improve the official data from nations in South America through the Global Data Toolset (GDT) <<http://rmgsc.cr.usgs.gov/gitan/>>, a mapping product developed by USGS-BIO and the USGS Rocky Mountain Geographic Science Center. The GDT maps a wide range of protected areas data from official country sources and non-government organizations such as The Nature Conservancy and Conservation International, and allows comparisons of protected areas with species data such as that from the IUCN Red List as well as environmental and cultural data.

For more information, contact John Mosesso <john_mosesso@usgs.gov>.

Upcoming Events of NBII Interest

2007 Ecological Society of America and Society for Ecological Restoration Joint Annual Meeting, San Jose, CA.	Aug. 5–10	2007 National Gap Analysis Conference, Asheville, NC.	Sept. 11–13
Managing Vertebrate Invasive Species, Fort Collins, CO.	Aug. 7–9	Association of Fish and Wildlife Agencies 2007 Annual Meeting, Louisville, KY.	Sept. 16–21
125th Stated Meeting of the American Ornithologists' Union, Laramie, WY.	Aug. 8–11	9th International Conference—Ecology and Management of Alien Plant Invasions, Perth, Western Australia, Australia.	Sept. 17–21
2007 Annual Conference of the Wildlife Disease Association, Estes Park, CO.	Aug. 12–17	NatureServe Conservation Conference 2007, Golden, CO.	Oct. 1–3
Wetlands 2007, Williamsburg, VA.	Aug. 28–30	34th Annual Natural Areas Conference, Cleveland, OH.	Oct. 9–12
American Fisheries Society 137th Annual Meeting, San Francisco, CA.	Sept. 2–6	18th Annual SAMAB Conference, Johnson City, TN.	Oct. 22–24



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